

**TECHNICAL MANUAL**

**DEPOT MAINTENANCE OF  
AEROSPACE VEHICLES  
AND TRAINING EQUIPMENT**

Prepared By: Automated Technical Order System (ATOS)

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## SECTION I

### GENERAL

#### 1-1 PURPOSE.

This technical order outlines the types and scope of depot maintenance support, and establishes procedures for scheduling aerospace vehicles and training equipment for depot maintenance. The provisions of this technical order (TO) are applicable to all Air Force (AF), Air National Guard (ANG) and Air Force Reserve (AFRES) activities. The AFMC Single Manager (SM) (includes System Program Directors (SPDs), Product Group Managers (PGMs) and Materiel Group Managers (MGMs)).

#### NOTE

The tables and intervals listed are those which the assigned System Program Director (SPD) has determined are valid. All recommended additions/deletions/changes from other activities must be submitted by letter directly to the SPD. Do not use the AFTO FORM 22 system.

#### 1-2 GENERAL POLICY.

The objective, policies, and responsibilities for the Air Force equipment maintenance program are established by AFIs 21-101 and 21-102. The policies pertinent to maintenance support are as follows:

1-2.1 The maintenance engineering objective is to assure that the best, most timely, and most economical means, consistent with mission requirement, are used to satisfy all approved requirements. The criteria used for meeting this objective will include comparative analysis of costs and benefits to the owning activity.

1-2.2 AFMC is responsible for management of the USAF depot maintenance program for aerospace vehicles and training equipment. The AFMC Single Manager is responsible for planning the depot maintenance program. Within AFMC, equipment specialists and item managers will reference the tables of this TO for assistance in determining the overall quantities of exchangeable assets.

1-2.3 Depot maintenance for aerospace vehicles and training equipment will be provided to MAJCOMs (ACC, AFSOC, AMC, ANG, AFRES, AFSPC, PACAF, AETC, AFMC, USAFE) that have received funds or direct appropriations for depot maintenance. Depot funds therefore involve a variety of appropriations, budget programs and

program elements. The commands will provide ALC/ SM with the appropriate funds citation and certification of funds availability.

1-2.4 The depot maintenance program will be based on data from reliability centered maintenance programs (MSG-3), the maintenance data collection system, requirements submitted by owning activities and other reliability and maintenance data sources. Except for unprogrammed emergency requirements, depot maintenance will be accomplished on a planned basis to facilitate the programming of funds, material, man-power, facilities and other resources. On mature aircraft with extensive operational and maintenance history, the SPD engineering functions may direct inspection requirements based on fleet experience without formal RCM analysis.

1-2.5 Field team accomplishment of depot maintenance is warranted when it will reduce the aerospace vehicle out of service time, degrade the mission accomplishment of tactical units less than if the maintenance is accomplished in a fixed facility, and be advantageous to the government.

1-2.6 When a requirement exists to input a missile into a TRC or on-site programmed maintenance and modification is required, the maintaining commands and the SPD, in conjunction with the ALC/Product Directorate, will develop the work package and schedule. When appropriate, the AFTO FORM 103, AIRCRAFT/MISSILE CONDITION DATA, will be used as outlined in paragraph 1-5.3.

1-2.7 Depot maintenance of training equipment is restricted to essential repair required to keep "T" coded aircraft, missiles, and Federal Supply Group (FSG) 69 training equipment in serviceable condition for training purposes. Engines will be removed from "T" coded aircraft and missiles and returned to supply channels when not required for the training program. If required, field teams will be dispatched to accomplish major modifications. If materiel resources are provided and technical skills exist, modification of trainers may be accomplished by operational units if jointly agreed to by AFMC and MAJCOM involved. Owning activities will advise Ogden ALC on operational training equipment, and the appropriate ALC/SPD on maintenance training equipment and the date depot maintenance support is required. The required work will be accomplished by field teams of the TRC in accordance with TO 43-1-1.

1-2.8 Depot possessed aircraft may be considered a source for parts based on the cannibalization criteria contained in TO 00-20-2. Prior to the arrival of a depot team at the repair site, request for cannibalization approval will be initiated by the unit Group Commander (Logistic, Operations, Test, etc.) and sent to the weapon SPD with an information copy to the MAJCOM/Maintenance/Supply Activities. The SPD will act on each request after considering what impact cannibalization action will have on depot field team maintenance requirements. When the SPD has delegated cannibalization approval authority to the onsite depot field team chief, the LG will seek approval directly from the team chief. The depot field team is not responsible for replacing the cannibalized items prior to transferring aircraft possession back to operational unit.

### 1-3 DEFINITION OF TERMS.

1-3.1 Aircraft Structural Integrity Program (ASIP) (MIL-STD-1530A). A time-phased set of required actions performed at the optimum time during the life cycle (design through phase-out) of an aircraft system to ensure the structural integrity (strength, rigidity, damage tolerance, durability and service life capability) of the aircraft. The results of the ASIP, ie., fatigue analysis, damage tolerance analysis, fatigue test results, individual aircraft tracking program, etc., are used in the RCM analysis of structurally significant items. These analyses and tests identify critical areas, inspection tasks, and frequencies.

1-3.2 Analytical Condition Inspection (ACI). The systematic disassembly and inspection of a representative sample of aircraft to find hidden defects, deteriorating conditions, corrosion, fatigue, overstress, and other deficiencies in the aircraft structure or systems. ACIs are normally over and above those inspections specified in the technical order or PDM work specifications.

1-3.3 Airframe Condition Evaluation (ACE). ACE generates deficiency data for engineering and technical evaluation of the relative aircraft condition resulting from corrosion, overstress, wear, and other effects of age, operational usage, and environmental exposure. ACE is normally performed by a Depot Field Team (DFT) or Contract Field Team (CFT). Under this program aircraft received a special structural and maintenance evaluation for symptoms of distress to obtain a physical condition profile which establishes the depot level threshold for On Condition Maintenance (OCM) that cannot be accomplished at Organizational and Intermediate level. The ACE selects those aircraft eligible for depot level maintenance and identifies the OCM tasks.

1-3.4 Controlled Interval Inspection (CIE). The controlled extension of a programmed depot

maintenance interval based on condition analyses of a representative sample of aircraft.

1-3.5 Depot Facility or Source of Repair Activity. An industrial type facility established to perform accessory overhaul functions, modifications or maintenance. This includes AFMC installations and commercial contractors who perform depot work on weapon systems or equipment under a contract issued and managed by AFMC.

1-3.6 Depot-Level Maintenance. The level of maintenance consisting of those on- and off-equipment tasks performed using highly specialized skills, sophisticated shop equipment, or special facilities of an ALC, centralized repair activity, contractor facility, or, in some cases, by field teams at an operating location. Maintenance performed at a depot also includes those organizational- and intermediate-level tasks required to prepare for depot maintenance, and, if negotiated between the depot and the operating command, scheduled field-level inspections, preventative maintenance or TCTOs which come due while equipment is at the ALC for PDM.

1-3.7 Excepted Aircraft. Those aircraft not requiring force wide scheduling for depot level modification or maintenance.

1-3.8 Failure Modes, Effects and Criticality Analysis (FMECA) (MIL-STD-1629A). An analysis performed to identify the predicted failure modes of an item and the effect each failure mode has upon the item, system, and end item operation.

1-3.9 Field Team. A team of maintenance personnel (AF, another service, contractor, or a combination thereof) possessing the necessary skills, special tools and equipment to accomplish modification and maintenance.

1-3.10 Item Manager (IM). An individual within an organization assigned management responsibility for one or more specific items of hardware.

1-3.11 Maintenance Requirements Review Board (MRRB). A panel that assures all valid depot level maintenance requirements are evaluated and scheduled for appropriate fiscal year accomplishment. The process for this assurance involves an annual on-site review of the proposed maintenance program for each weapon system to assess the depot interval, the time in depot (flow days), and the validity of each detailed task in the work package. The panel is comprised of using command representatives and AFMC engineering, funding and aircraft maintenance experts. Changes to an approved maintenance program must be submitted with complete justification to the MRRB prior to incorporation in the work package and submission for funding. MRRBs are convened at the Air Logistics Center and major command levels.

1-3.12 Maintenance Steering Group Document Number Two (MSG-2). This document describes an analytical process used by the airline industry to establish or update scheduled maintenance requirements on a variety of commercial aircraft.

1-3.13 Maintenance Steering Group Document Number Three (MSG-3). This document identifies an improved decision logic over the MSG-2 logic in that it provides a more rational procedure for task definitions and a linear progression through the decision logic. It also expands the logic to include propulsion systems.

1-3.14 Materiel Group Manager (MGM). The single manager for a Materiel Group, who has the same responsibilities as a System Program Director or Product Group Manager for the assigned materiel.

1-3.15 On Condition Maintenance (OCM). OCM is a program to schedule selected aircraft into a depot level facility to correct known specific defects. Selection is based on combinations of critical and multiple major defects. Critical defects are significant faults on primary structure. Major defects are significant faults to secondary structure. OCM is selected so that contracted corrective action can be tailored to known, specific aircraft needs as a result of the ACE program.

1-3.16 Product Group Manager (PGM). The single manager for a Product Group, who has the same responsibilities as a System Program Director or Materiel Group Manager for the assigned products.

1-3.17 Reliability-Centered Maintenance AFMCI 21-103. A maintenance concept that has the objective of achieving the inherent, or designed-in, reliability of a system. The concept is a derivative of the airline/manufacture maintenance planning document MSG-2 and MSG-3, published under the auspices of the Air Transport Association.

1-3.18 Reliability-Centered Maintenance Analysis AFMCI 21-103. A structured approach to the development of an RCM concept for a system or end item. It used FMECA and integrity program outputs and MSG-2/MSG-3 logic to identify maintenance tasks which must be performed on a scheduled basis to ensure the attainment of inherent reliability.

1-3.19 Modification. A physical alteration of equipment that changes its capabilities or characteristics, i.e., form, fit or function.

1-3.20 Programmed Depot Maintenance (PDM). Inspection requiring skills, equipment or facilities not normally possessed by operating locations.

1-3.21 Sectionalized Work Requirements Package. The aircraft PDM work package developed to identify the maintenance and/or modification, sectionalized by tasks, to be done on aircraft or equipment being input to a source of repair.

1-3.22 Single Manager (SM). The SPD, PGM or MGM in charge of a weapon/military system, product group, or materiel group.

1-3.23 Source of Repair (SOR). An industrial complex (organic, commercial contract, or interservice facility) with required technical capabilities to accomplish repair, overhaul modification, or restoration of specific types of military hardware or software.

1-3.24 System Program Director (SPD). The individual in an AFMC SPO who is ultimately responsible and accountable for decisions and resources in overall program execution. The single face to the user who oversees the seamless process. SPD is the designated title for the single manager of a program who reports to a Program Executive Officer (PEO) or Designated Acquisition Commander (DAC).

1-3.25 Technology Repair Center (TRC). A functional entity with an AFMC source of repair activity which accomplishes depot level maintenance on a specific group of items.

1-3.26 Training Equipment. Aircraft, missile and other training equipment in FSG 69; trainers that are part of a Mobile Training Set (MTS) or Resident Training Equipment (RTE). Training equipment includes all trainers reportable in accordance with AFI 21-103.

1-3.27 Safety of Flight (SOF). A SOF write-up indicates that the weapon system or equipment unit is considered unsafe or unfit for flight or use and that the weapon system will not be flown or the equipment used until the unsatisfactory condition is corrected.

#### 1-4 TABLES.

Tables 1-1, 1-2, 1-3, and 1-4 indicate the basis upon which the various mission design series (MDS) aerospace vehicles will be scheduled for depot modification and maintenance. If technical or operational considerations warrant development of a program that deviates from the published tables or intervals specified in the following sub paragraphs, approval can be granted by the assigned SPD. The SPD has the technical expertise and authority to determine if a PDM can be safely extended. Aircraft programmed for transfer to the AFRES or ANG active inventory will continue to be scheduled at the appropriate time intervals. If aircraft are scheduled for active inventory phase out, the proper SPD does an analysis to find options for minimizing aircraft fleet PDM needs. A mandatory option the analysis

addresses is a proposal of aircraft transfer within or between major commands, when cost-effective, without degrading mission performance. As a result of the analysis, the SPD provides all options minimizing PDM needs for programmatic concurrence by the AF/MRRB. Concurrences will be forwarded to HQ USAF/LGM for review.

1-4.1 Table 1-1 lists aircraft scheduled on the basis of modification accomplishment rather than on a time cycle basis. Table 1-1 applies when modification priorities and availability of kits or facilities are incompatible with calendar cycle PDM scheduling.

1-4.2 Table 1-2 lists aircraft scheduled for PDM on a cyclic interval with the cycle time stated in months. The PDM interval is measured from the output date of the last PDM to the input date of the next due PDM. Supportable depot modifications will be completed concurrently with PDM. To assist in scheduling PDM input, up to a 90-day plus or minus variance from the PDM due date is allowed. An aircraft is considered due PDM when the cycle time shown in table 1-2 has passed. A red dash will be entered in the aircraft forms on the PDM due date. When the PDM due date plus 90 days passes, the red dash will be upgraded to a red X. If extensions beyond 90 days are required for operational reasons, SPD approval is required. The operating unit shall request extension through MAJCOM headquarters to the aircraft SPD. The SPD will direct special inspections (usually contained in the -6 Scheduled Inspection and Maintenance Requirements T.O. section II), define when the inspections must be completed by before system removal from service, and the period allowed after accomplishment before the PDM becomes mandatory. After the specified time elapses, the aircraft will be placed on a red X symbol. The red X will only be downgraded for a one-time flight to the depot facility. The time allowed after accomplishment of the PDM extension shall not exceed one year. All requests approved by the SPD shall be routed to the AF MRRB and HQ USAF/LGM for final review. Exceptions to the 1 year policy are allowed for aircraft in the CIE program and for special project aircraft. All CIE aircraft must be identified by serial number. Requests for PDM extension on special project aircraft, included CIE aircraft, must be forwarded to the SPD. The SPD shall insure airworthiness and safety are maintained throughout the CIE program and all PDM extensions. On CIE extensions and PDM extensions beyond one-year, approval must be granted by the SPD, AF MRRB, and HQ USAF/LGM.

1-4.3 Table 1-3 lists aircraft not contained in tables 1-1 and 1-2. These aircraft are exempt from force wide scheduling for these reasons:

1-4.3.1 The aircraft can normally be fully maintained by the owning activity.

1-4.3.2 Depot maintenance requirements are determined by the condition of individual aircraft rather than the force as a whole.

1-4.3.3 Aircraft condition warrants establishing special procedures for providing required depot maintenance and modification. When depot level maintenance or modification requirements exist for aircraft in table 1-3, the SPD in conjunction with the owning activity will program and schedule the work to be accomplished.

1-4.4 Fiscal year programs for depot maintenance of aircraft are developed in accordance with tables 1-1 through 1-3. The tables will be revised when warranted, based on SPD analysis of:

1-4.4.1 Data from RCM programs (MSG-3).

1-4.4.2 ACI data.

1-4.4.3 CIE program data.

1-4.4.4 Findings of previous depot work.

1-4.4.5 ASIP data.

1-4.4.6 Modification requirements.

1-4.4.7 Maintenance data collection system data.

1-4.4.8 Materiel deficiency reports.

1-4.4.9 Inquiry. The SPD may ask commands to provide data to statistically assess the prevalence of a suspected condition in the force. This pertains to items that will not adversely impact upon the owning activity operational mission and that can easily be verified during regularly scheduled inspection at the operating location.

1-4.5 Table 1-4 lists those AF aircraft designated to comply with civil airworthiness standards in accordance with AFD 62-4 (Civil Airworthiness Standards for USAF Transport Aircraft) and AFI 21-107 (Maintenance Commercial Derivative Aircraft). These Commercial/Derivative aircraft were delivered to the AF in compliance with civil airworthiness standards set by the FAA. AF policy is to maintain these aircraft as close as possible to the same airworthiness standards. The SPD will use only FAA-certified contractors for contract depot maintenance of commercial derivative aircraft. The SPD will use the original equipment manufacturers maintenance procedures to meet FAA maintenance requirements. Therefore, these aircraft are exempt from the requirements of the CIE, and ACI programs.

## 1-5 DEVELOPMENT OF AIRCRAFT REQUIREMENTS.

1-5.1 The SPD, in coordination with owning activity, will determine depot maintenance requirements for the next fiscal year and forecast depot maintenance requirements for subsequent fiscal years. Prior to AF/MRRB review, the SPD will develop a sectionalized work requirements



package of maintenance and modification requirements by mission design aircraft (or series within a mission design) in accordance with table 1-5. The sectionalized work requirements package, provided to owning activity by the SPD, will conform to the criteria for depot accomplishment and will include operational checks and/or functional check flight (FCF) in accordance with TO 1-1-300. The sectionalized work requirements package should not be changed during the fiscal year program except for changes affecting safety, or additional maintenance requirements generated by history ASIP, CIE and/or ACI findings. The SPD is responsible for a critical review of all work such as the following prior to inclusion in the sectionalized work requirements package.

1-5.1.1 Items of maintenance not directly associated with depot requirements can be included in the work package, but are subject to the guidelines delineated in table 1-5. These tasks include safety of flight, economy maintenance/modifications and negotiated maintenance/modifications.

1-5.1.2 Engines damaged as a result of foreign object damage (FOD) and/or negligence while in possession of AFMC at a PDM facility will be replaced by AFMC without impact upon the using command. Engines requiring return to overhaul for any reason other than stated above will have a replacement engine in QEC configuration furnished by the maintaining command.

1-5.1.3 Engine maintenance requirements are limited to those classed as economic repair (replacement of clamps, external lines, bolts on accessories, feathering of vanes, etc.), next due major aircraft inspection tasks and the correction of SOF defects.

1-5.2 Prior to approval of a depot program by the AF/MRRB, the owning activity can negotiate with the SPD for certain maintenance to be accomplished concurrent with PDM. These maintenance requirements include such items as supportable TCTOs and next due major inspection (excluding engines). Those benefits to be realized by the owning activity will be identified to each task such as increases in mission readiness time or other tangible benefits. Documents of negotiation are exempt from Report Control S Symbol (RCS) licensing in accordance with paragraph 2.11.10 of AFI 37-124 the Information Collections and Reports Management Program; Controlling, Internal, Public, and Interagency AF Information Collections. After the PDM program is approved by the AF/MRRB the work specification is updated by the SPD if required. The SPD will furnish to each owning activity, by 1 September of each year or as soon as possible thereafter, a copy of the respective work specification for the fiscal year beginning 1 October of that year. Owning activities will

provide copies of work specifications to their respective operating units.

1-5.3 Use of AFTO FORM 103 (figure 1-1). The using activity will complete an AFTO FORM 103 PART A (general information) for each of their aircraft scheduled for PDM. The using activity can list, after reviewing the depot work specification, in PART B (additional depot work) those defects which are known or thought to be beyond their capability but are not included in the depot work package. (Some examples are: hidden corrosion, fuel leaks, structural damage or temporary repairs.) Outstanding TCTOs or depot maintenance requirements which are identified in the work specification will not be listed. Organizational maintenance and inspections may be identified for negotiations. The status of negotiated TCTO kits (table 1-5, section B.2) (kit not available, kit to be shipped with aircraft, kit to be mailed, etc.) can be listed. Three copies of the form will be initiated 55 days in advance of the scheduled input date for PDM to allow for command review and delivery of two copies of the form to the SPD 45 days prior to the scheduled date. The owning activity will identify an office of primary responsibility (OPR) to review and certify that the work listed in PART B of the form is valid requirements not included in the depot work specification and will, when applicable, certify that additional funds will be provided. The owning activity OPR will sign the form as having been reviewed and forward two copies to the SPD. The SPD will review the defects and organizational requirements listed on PART B of the form and either approve or disapprove the correction of the work listed. Those defects/work which have been approved for correction will be referenced in PART C of the form by the SPD and a copy of the completed form given to the maintenance activity performing the PDM. Copies of the approved AFTO FORM 103 will be sent the owning activity/OPR and the initiating activity 20 days prior to the scheduled input date for PDM for the listed serial numbered aircraft. A supplemental AFTO FORM 103 can be submitted at the time of delivery of the aircraft to the PDM facility. The supplemental form will address depot requirements which have been found since submission of the original form or to reflect changes in the status of negotiated TCTO kits. The supplemental form will be initiated in at least three copies: one retained by the initiator, and two copies forwarded to the PDM activity with the aircraft records. The initiator will notify the owning activity/OPR and the SPD by message before the aircraft departs for the PDM facility. The message will contain as a minimum the information in PART A, blocks 1, 2, 3, and 5, and the new information for PART B of the

form. When supplemental forms are received by the PDM facility, either the SPD will be notified or one copy will be given to the SPD representative, and one retained for planning purposes. However, no work listed will begin until approved by the SPD. The SPD, after coordination with the Owning Activity/OPR, will notify either the PDM facility or the SPD representative, who will notify the PDM facility of that work which is approved. Either the PDM facility or the SPD representative will forward a copy of the supplemental form to the SPD who will annotate the form as to what work was approved and forward copies of the completed forms to the owning activity/OPR and the using activity. When an originally scheduled aircraft is unable to be delivered, a substitute serial numbered aircraft can be input, providing the serial number is approved by the owning activity and the SPD. The initial approval will be obtained by telephone, and confirmed by message. If an AFTO FORM 103 has not been submitted for the substitute serial number, the procedures for supplemental forms will be followed. The AFTO FORM 103 is exempt from RCS under the provisions of AFI 37-124.

#### **1-6 INPUT AND OUTPUT SCHEDULES.**

The SPD, in coordination with the owning activity, will develop input/output schedules for PDM. The using commands will insure that sufficient aircraft are retained in order to accomplish their overall mission assignments while satisfying the planned PDM schedules. The priority with which individual aircraft will be scheduled for PDM will be based on the PDM due date and the estimated condition. This will assure that aircraft which urgently need PDM are scheduled first. The SPD will notify the owning activity of the location of the SOR to which the aircraft is to be delivered at least 90 days before the delivery date. Deviation to programmed delivery dates (input and output) will be by mutual agreement of the owning activity and the SPD. Transfer of possession of aircraft will be established and reported in accordance with AFI 21-103. Phased retirement of a mission design series (MDS) aircraft from the active inventory extending over a period of several years affects the fiscal year quantities to be programmed and the individual aircraft to be scheduled for PDM. Aircraft will be deleted by MDS from PDM if programmed to be dropped from the active inventory within two years. Advance identification of the aircraft, which will be dropped each fiscal year quarter by aircraft serial number, is required of the owning activity to assure proper programming and scheduling.

#### **1-7 CONTROLLED INTERVAL EXTENSION (CIE) PROGRAM.**

The objective of this program is to provide technical data to determine the feasibility for extending maintenance and inspections intervals without sacrificing safety of flight or reliability.

1-7.1 A CIE program is required for all aircraft listed in table 1-2, unless a waiver has been obtained from the AF/MRRB. If the SPD review of data obtained from a given CIE program, correlated to ACI and/or ASIP program data, indicate that further interval extension is not feasible, this data will be presented to AF/MRRB for approval to terminate the CIE program. The SPDs shall periodically review and evaluate current PDM programs to determine whether or not the current interval is optimal. This action shall be accomplished within the bounds of this technical order and AFMCI 21-104. Any recommended changes resulting from this review and evaluation must be approved by the AF/MRRB.

1-7.2 The number of each MDS aircraft to be included in the CIE program will be identified by the SPD and affected owning activity using the CIE sample size table, table 1-6, as the basis for selecting quantity of aircraft. In determining the total force size for a specific aircraft by MDS, deduct from the total inventory all aircraft of that MDS in storage at the Aerospace Maintenance and Regeneration Center (AMARC), those aircraft on bailment or loan to other services or government agencies, and foreign country aircraft supported under international logistics programs. The aircraft selected for the CIE program will be programmed to exceed the normal PDM calendar time cycle authorized in table 1-2. At the end of the CIE period, each aircraft will be scheduled for PDM and a sample of CIE aircraft will be scheduled for an ACI. The data obtained will be analyzed and used in establishing inspection requirements and PDM intervals.

#### **1-8 ANALYTICAL CONDITION INSPECTION (ACI).**

ACIs are in-depth condition inspections accomplished on a representative sample of MDS aircraft to uncover hidden defects that are not detectable through normal inspection programs. ACIs generate data for engineering and technical evaluation of the relative MDS aircraft condition resulting from corrosion, overstress, wear and other effects caused by aircraft age, operational usage and environmental exposure. Adequate nondestructive inspection techniques will be used to insure that the types and sizes of flaws suspected to be found can be reliably detected. The owning activity will be informed of their specific aircraft's ACI findings and actions taken or contemplated to correct deficiencies revealed through the ACIs.

1-8.1 All aircraft listed in tables 1-1, 1-2, and 1-3 will be programmed for ACI by the SPD. The number of ACIs for MDS aircraft will be determined using the ACI sample size table, table 1-7. If the SPD does not program the sample size quantity of MDS aircraft for ACI as specified in table 1-7, the rationale for this decision will be forwarded to AF/MRRB for review and approval. The primary sample size column indicates the quantity of aircraft to be inspected to isolate defects that exist in 20 percent or more of the force at a 90 percent confidence level. It should be noted that for small force sizes, up to 36 aircraft, the sample size was considered excessive to achieve the 90 percent confidence level. This reduces the confidence level for small forces to as low as 53 percent. It is recommended that highly suspect/critical areas be sampled at the 90 percent confidence level. It is possible to isolate the only defect that exists in the entire force. Once a major or critical defect is found, the secondary sample column (table 1-7) indicates the additional number of aircraft that must be inspected without finding another defect existence is below a 20 percent prevalence level. If these additional samples

reveal another defect, then it can be assumed the defect exists in 20 percent or more of the force.

1-8.2 Tables 1-1 and 1-2 will have an ACI accomplished concurrent with the PDM/modification program.

1-8.3 Table 1-3 aircraft ACIs may be accomplished at operational sites by depot or contract field teams or at contract or depot facilities. If accomplished at the operational sites, the ACI tasks related to suspect or critical areas should be accomplished concurrently with a scheduled maintenance inspection. PDM requirements or related intervals will be determined from analysis of maintenance data generated by ACI accomplishment on table 1-3 aircraft.

1-8.4 PDM requirements or related intervals of maintenance for aircraft still in initial acquisition will be determined by the SPD through the analysis of data generated by accomplishment of ACI programs.

1-8.5 ACI program will be discontinued on aerospace vehicles scheduled for active inventory phase out.

*Table 1-1. Modification*

Aircraft scheduled on the basis of modification accomplishment rather than on a time cycle basis.

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DESIGNATION

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A-10

F-16

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Table 1-2. Programmed Depot Maintenance

Aircraft scheduled on a calendar time cycle (in months) for depot maintenance. The listing of a basic mission design, includes all series and prefixes, unless otherwise indicated.

DESIGNATION	INTERVAL
NC-130A	60
C-130E/H (PACAF)	54
C-130J, EC-130J, WC-130J	69**
AC-130H, MC-130E	54
AC-130U, MC-130H	60
WC 130H	60
AGM-86B Recertify every	30
BGM-109G Recertify every	30
B-1B	60
B-2	60
B-52	48
RC-135	36
C/EC/KC-135 assigned to SAM-HAWAII	36
KC-135A NASA	48
KC-135R assigned to Hickam AFB	48
KC-135D/E/R/T excluding a/c identified above	60***
C-135 (except aircraft above), EC-135E, NKC-135, TC-135, WC-135	60***
EC/OC-135 aircraft not identified above	48
C-130E, C-130H, EC-130E, NC-130H	69**
HC-130P and HC-130N Prior TO 78-0805	69*
HC-130H/N/P Prior to 78-0805	69****
C-137	36
C-141	60
C-5A	60
C-5B	84
E-3	48
F/FB-111	48
F-15	72
F-4C	36
F-4D	48
F-4E/G, RF-4C	54
EC-130H, MC-130P, EC-130V	60
MC-130H, AC-130U	60
LC-130H Prior to 78-0805	60
LC-130H and HC-130N 78-0806 and subsequent	69**
* With 30 month Mid-interval inspection (AFRC only)	
** Initial PDM not to exceed 180 months from aircraft activation date	
*** Extension inspection at 44-51 months	
**** ANG, ACC, and AETC HC-130N/P aircraft only	

Table 1-3. Excepted Aircraft

DESIGNATION	DESIGNATION
A-7	*H-60
*A-37	*O-2
*C-131	OV-10
*C-140A	*T-33
*F-5	T-37
*F-106	T-38
*H-1	T-39
*H-53	F-16
*F-117	C-17

\*Indicates aircraft exempted from ACI

Table 1-4. *Commercial Derivative Aircraft*

Aircraft listed are maintained in compliance with FAA regulations. The System Program Director will use only FAA-certified contractors for contract depot maintenance of commercial derivative aircraft. The SPD can utilize the PDM concept or any other method to meet FAA approved maintenance requirements.

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**DESIGNATION**


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C-9	C-23*	T-1*
KC-10	VC-25	T-3*
C-12*	C-26*	T-41*
C-18	C-27*	T-43
C-20	C-137	Air Force Academy*
C-21*	E-4	JPATS*
■ C-22	E-9*	E-8

\* These aircraft are maintained according to an FAA approved manufacturer's maintenance manual. This manual provides for the continuous inspection of critical components, thereby eliminating the need for programmed depot maintenance.

AIRCRAFT/MISSILE CONDITION DATA					DATE	PAGE _____ OF _____ PAGES
PART A	1. USING ACTIVITY ADDRESS		MAINTENANCE OFFICER			
			TYPE / PRINT NAME, GRADE, AND PHONE		SIGNATURE	
2. MDS	3. SERIAL NUMBER		4. SUB SERIAL NO	5. SCHEDULED INPUT DATE	6. HRS / MONTHS SINCE LAST PDM	7. HRS / MONTHS SINCE NEW
PART B	MAJCOM OFFICE OF PRIMARY RESPONSIBILITY LOCATION		ITEMIZE SPECIFIC AREAS OF HIDDEN CORROSION FULE LEAKS. TEMPORARY REPAIRS ECT DO NOT LIST ITEMS INCLUDED IN THE DEPOT WORK SPECIFICATION NEGOTIATED TCTO KIT STATUS CAN BE NOTED.			
REVIEWING OFFICER						
TYPE / PRINT NAME, GRADE AND PHONE				SIGNATURE OF MAJCOM OPR. AND DATE		
PART C	SYSTEM MANAGER ADDRESS		THE SM WILL IDENTIFY THOSE ITEMIZED TASKS IN PART B WHICH ARE APPROVED FOR ACCOMPLISHMENT DURING PDM.			
SYSTEM MANAGER						
TYPE / PRINT NAME, GRADE AND PHONE				SIGNATURE AND DATE		
DATE PDM ACTIVITY ACCEPTED ADDITIONAL WORK						
DATE COPY OF COMPLETED FORM TO MAJCOM						
DATE COPY OF COMPLETED FORM TO USING ACTIVITY						
<p>INSTRUCTIONS: THE USING ACTIVITY WILL INITIATE PARTS A AND B OF THIS FORM 55 DAYS PRIOR TO SCHEDULED INPUT DATA FOR PDM ON THE LISTED SERIAL NUMBER. THE MAJCOM OPR WILL REVIEW AND FORWARD THIS FORM TO THE SM 45 DAYS PRIOR TO THE INPUT DATE LISTED. THE SM WILL IDENTIFY THAT WORK WHICH IS APPROVED AND RETURN TO INITIATOR 20 DAYS BEFORE INPUT.</p>						

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Figure 1-1. AFTO FORM 103 "Aircraft/Missile Condition Data"

Table 1-5. Sectionalized Work Requirements

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MRRB Brochure Section Specifications, contains the sectionalized work requirements identified to specific tasks with the associated man-hour requirement. All operations that are task specific are identified to the appropriate task section. Any exceptions or changes to the tasks detailed in sections A.1. through C.4. must be approved by the AF MRRB. Man-hour data are shown in DPSH.

#### SECTION A. Programmed Depot Maintenance (DM) Interval Rationale.

- a. Section A.1. Current Maintenance Programs.
- b. Section A.2. Age Since Last PDM. Combine total aircraft quantities for both organic and contract PDMs.
- c. Section A.2.2. Show weapon system total aircraft inventory (TAI) by major command for current execution year and next four years.
- d. Section A.3. Aircraft Structural Integrity Program (ASIP).
- e. Section A.4. Reliability Centered Maintenance Program (RCM).
- f. Section A.5. Controlled Interval Extension Program (CIE).
- g. Section A.6. Analytical Condition Inspection Program (ACI).

#### SECTION B. Depot Work Requirements.

- a. Section B.1. Depot Level Maintenance.
  - 1. Section B.1.A. Incoming Tasks. Tasks required to prepare the aircraft for entry into depot work include but are not limited to the following, post flight checks, disarming, securing munitions and explosives, defueling, system purging, washing, inventory of aircraft associated equipment, storage of equipment, preservation and towing of the aircraft to the point where initial PDM work begins. Incoming processing tasks will not extend beyond where the initial depot level work, as detailed in the work specification, begins. Entry of associated text in the task description is optional.
  - 2. Section B.1.B Depot Tasks. Tasks requiring depot skills, equipment, tools, or facilities as supported by engineering/technical rationale. This category of work also includes open up, close up, Examination and Inventory (E&I), inspection and repair to maintain airworthiness, authorized routing of components, necessary system checks and required movement of aircraft. This category of work is considered complete upon entry of aircraft into flight test. Entry of associated text in the task description is mandatory to the extent necessary to justify the task. The table below contains examples of tasks that should be included as part of the depot task standard.



Table 1-5. Sectionalized Work Requirements - Continued

Examples of tasks included in section B.1:

Repair of XF3 items  
 Vehicle Support  
 E&I  
 Fuel System Operator  
 Hazardous Material Handling  
 Outside Work on Aircraft  
 Aircraft Shop Support

When a depot task is being recommended for deletion, leave it in the brochure (zero occurrence factor) for the FY in review; state in the engineering recommendation narrative the reason for wanting to delete the task and request board approval. The task should not be deleted until after the AF MRRB review. The index will continue to show the title of the task. State in the ALC Use column the 'FYXX MRRB' the task was deleted.

3. Section B.1.C. Economy Tasks. Predictable maintenance and Time Compliance Technical Orders (TCTOs) done concurrently with PDM for economy reasons. Work of this type located in or adjacent to a DM requirement are strictly limited to those areas worked or opened up in support of tasks defined in section B.1.B. This category of work must be clearly identified and supported by specific detailed analysis of individual tasks and their relationship to the associated depot task. Entry of associated text in the description is mandatory.

4. Section B.1.D. Flight Safety Tasks. Correction of Flight Safety TCTOs that become known while the aircraft is in the depot facility and those time change/calendar inspections that come due. This type of task, if not covered by the work specification, will be classified as over and above. Entry of associated text in the task description is optional.

5. Section B.1.E. Over and Above Tasks. Low frequency items or work found during the normal work process that is not called out in the work specification or project directive or covered under economy or flight safety tasks. These items of work will be done to correct a critical or major deficiency and must be approved by the Project Administration Officer (PAO). Do not enter any associated text in the task description.

6. Section B.1.F. Flight Preparation Tasks. This category of work includes flight test requirements and associated movement of aircraft as a result of DM and is considered complete following final functional check flight. Do not enter any associated text in the task description.

7. Section B.1.G. Delivery Tasks. Tasks performed to ready the aircraft for final delivery to the using organization. Required movement of aircraft, outgoing inventory of equipment, refueling, servicing, and preflight are examples of tasks included in this category. Do not enter any associated text in the task description.

b. Section B.2. Negotiated Time Compliance Technical Orders. This section normally includes all TCTOs and modifications done concurrent with DM. The data in this section is optional for modifications and TCTOs that are not funded through the MRRB process. TCTO/modifications may be tracked in this section of the brochure for informational purposes only. Total DPSH per aircraft may be entered with a zero occurrence factor. This is done in order for the DPSH not to be reflected in the summary totals (Section C.1.).

Table 1-5. Sectionalized Work Requirements - Continued

c. Section B.3. Negotiated Maintenance. These tasks consist of organizational maintenance or inspections which have been determined by negotiations between the using command and the SM, excluding engines. They consist of those tasks which can best be performed during PDM. These tasks are ranked by priority of need by the initiator.

d. Section B.4. Special Depot Requirements. Other depot needs such as field Teams, Drop-in maintenance, Speedline, special paint requirements, reporting, sealant mixing, and one time inspections will be shown in this section. DPSH breakout will be identified to those aircraft for which the tasks are required. Reflect total DPSH per each special depot requirement in this section and a grand total of all requirements per MDS in the summary section (C.1.). This section will not add cumulatively. The table below contains examples of tasks that should be included in special depot requirements.

Examples of tasks included in Section B.4:  
Forms & Records Processing/ACI Forms  
Maintenance Review Team (MRT)  
Material Handling/Expeditors  
Sealant Mixing/Dispensing  
Aircraft Team Leaders  
Repair Contingency's (DFT, ADRs, Drop-in's, etc)

#### SECTION C. Summary Information.

a. Section C.1. Summary Hours Per Aircraft/Mission Design Series MDS (Organic). This section shows the totals for the individual task sections by Mission/Design/Series (MDS). For ACI, hours are listed for annual tasks, annual fix, phased tasks, and phased fix. In the PDM area a total for section B.1. is provided with a breakout of each individual sub-section. Totals for the B.2., B.3., and B.4. sections are also provided. The number of ACI aircraft entering depot shown here is taken from table 1-7, schedule of ACI aircraft. The number of PDM aircraft is taken from the introductory title information area. Also shown are the total hours applied against all aircraft entering the depot. Each entry in the ACI section is multiplied by the number of ACI aircraft and each entry in sections B.1., B.2., and B.3. are multiplied by the number of PDM aircraft. Section B.4. is a separate number of hours shown as a total.

b. Section C.2. Special Interest Items. This section shows highlighted tasks. The subject and hours are entered in the individual sections under the appropriate task number, Section A.6. for ACI tasks and sections B.1.A. through B.1.G. for the PDM tasks. The tasks information listed here are only highlighted for visibility. The hours are still totaled in the appropriate section based on the task number.

c. Section C.3. Contract Summary. This section reflects the number of existing planned contract programs, by MDS, in terms of estimated dollars. The dollars should be listed under PDM or ACI costs. If the costs are not broken out, simply enter the total for the contract under the PDM cost.

d. Section C.4. Recommendations/Comments. This area is used for anything else the SM would like to highlight for the board's attention. Any future initiatives should be mentioned here as information only.

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Table 1-6. CIE Sample Size

A CIE program is not required for force of 36 aircraft or less.

<u>Force Size</u>	<u>CIE Sample Size</u>
37-56	11
57-109	12
110-399	13

Table 1-7. ACI Sample Size

<u>Force Size</u>	<u>Primary ACI Sample</u>	<u>Secondary ACI Sample</u>
1-36	25% of force	an additional 25% of force
37-199	10	13
200 and over	11	13

Once a major or critical defect is found in the primary sample, the secondary must be inspected (making 24 aircraft for a 200 aircraft force) without finding another defect to be 90 percent confident that the defect existence is below a 20 percent prevalence level.

